

FIG. 1

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Quadrature Mach-Zehnder Modulation Device

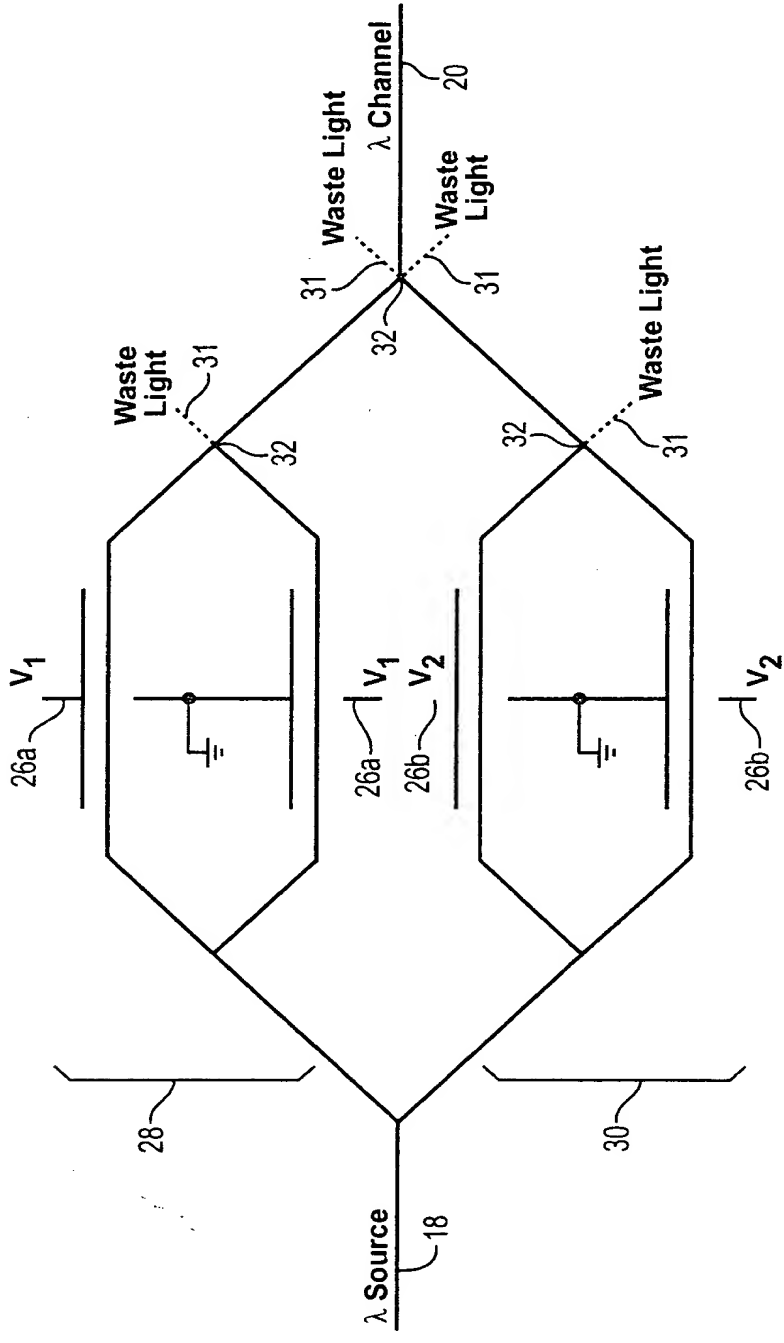


FIG. 2

Mach-Zehnder Device Transfer Function

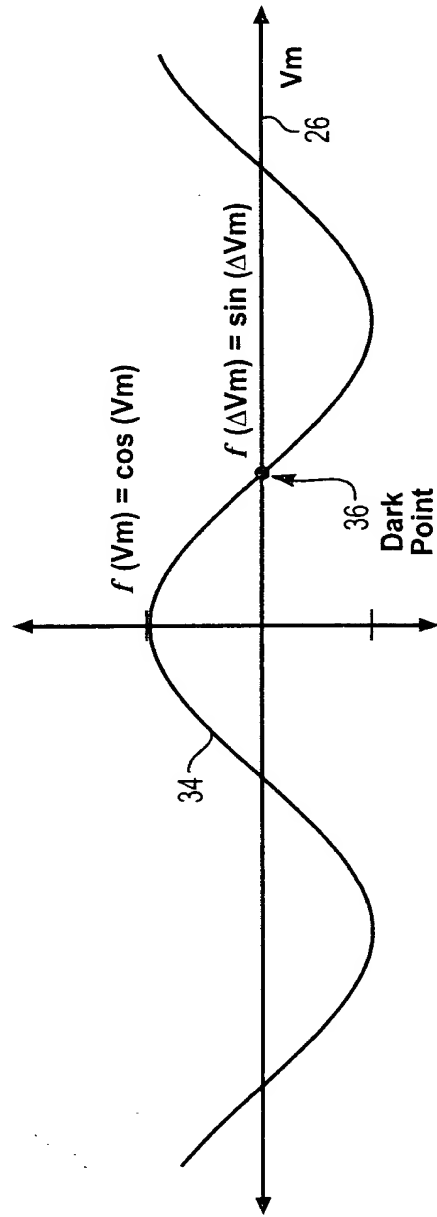


FIG. 3

Modulation Synthesizer

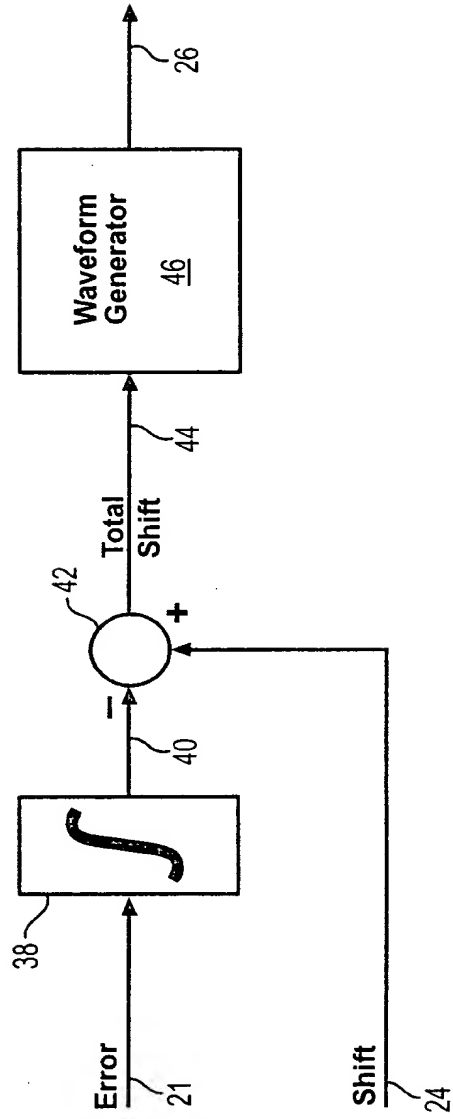


FIG. 4

Quadrature Modulation Synthesizer (With On/Off Data Keying)

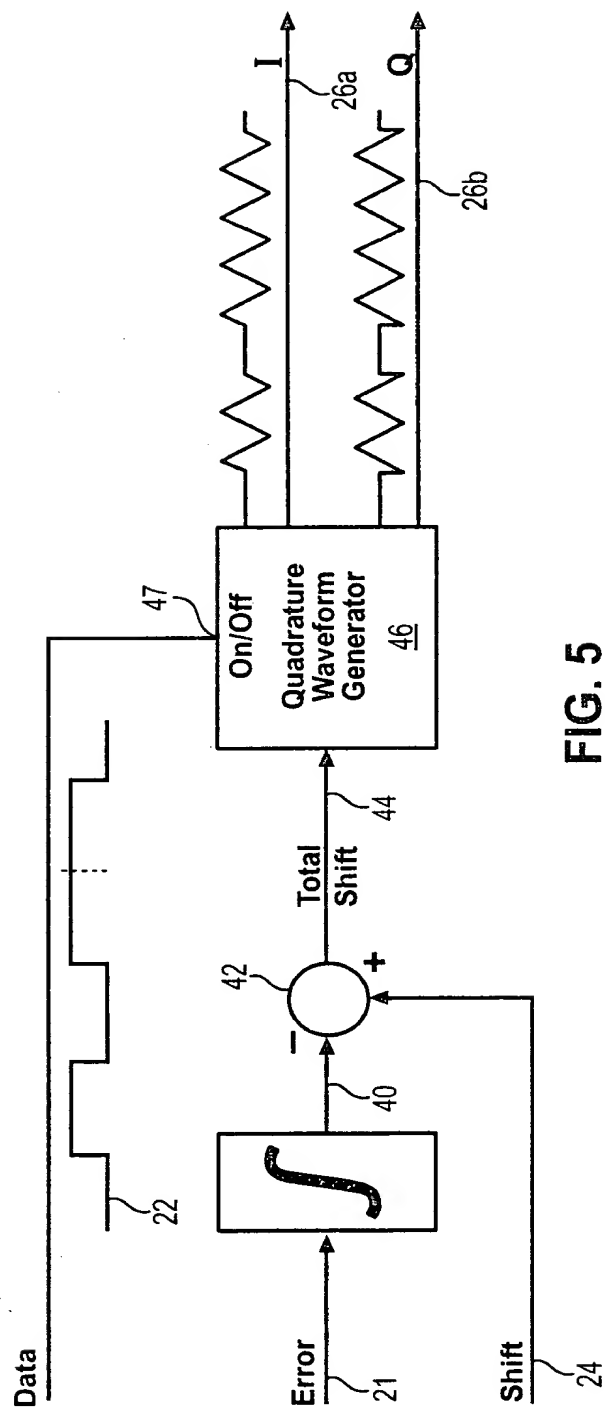


FIG. 5

$\{f_{11}^{(1)}, f_{12}^{(1)}, \dots, f_{1n}^{(1)}\}$ and $\{f_{21}^{(1)}, f_{22}^{(1)}, \dots, f_{2n}^{(1)}\}$ in \mathcal{H}_1 and with \mathcal{H}_2

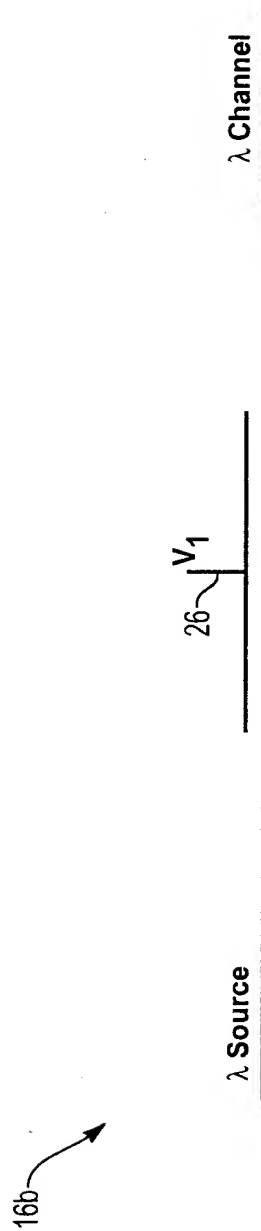


Fig. 6

Modulation Synthesizer (With Frequency Shift Keying)

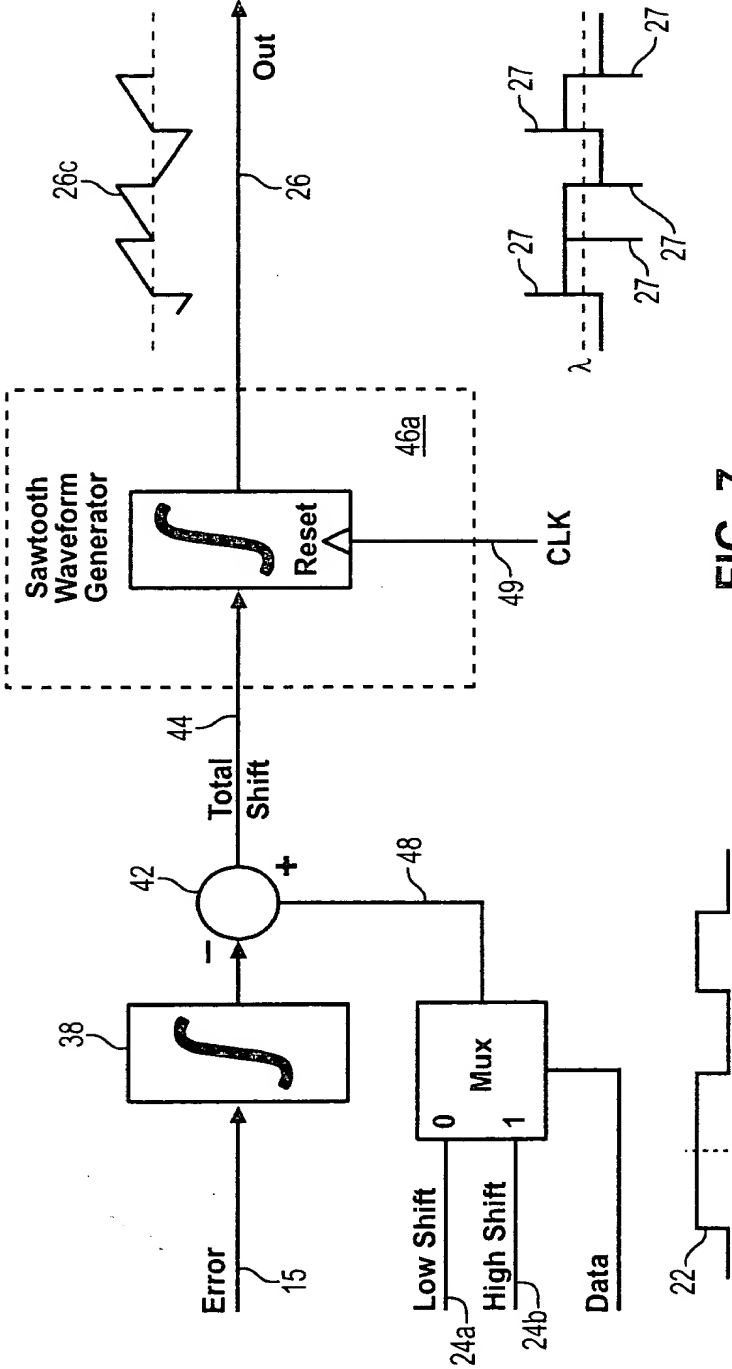


FIG. 7

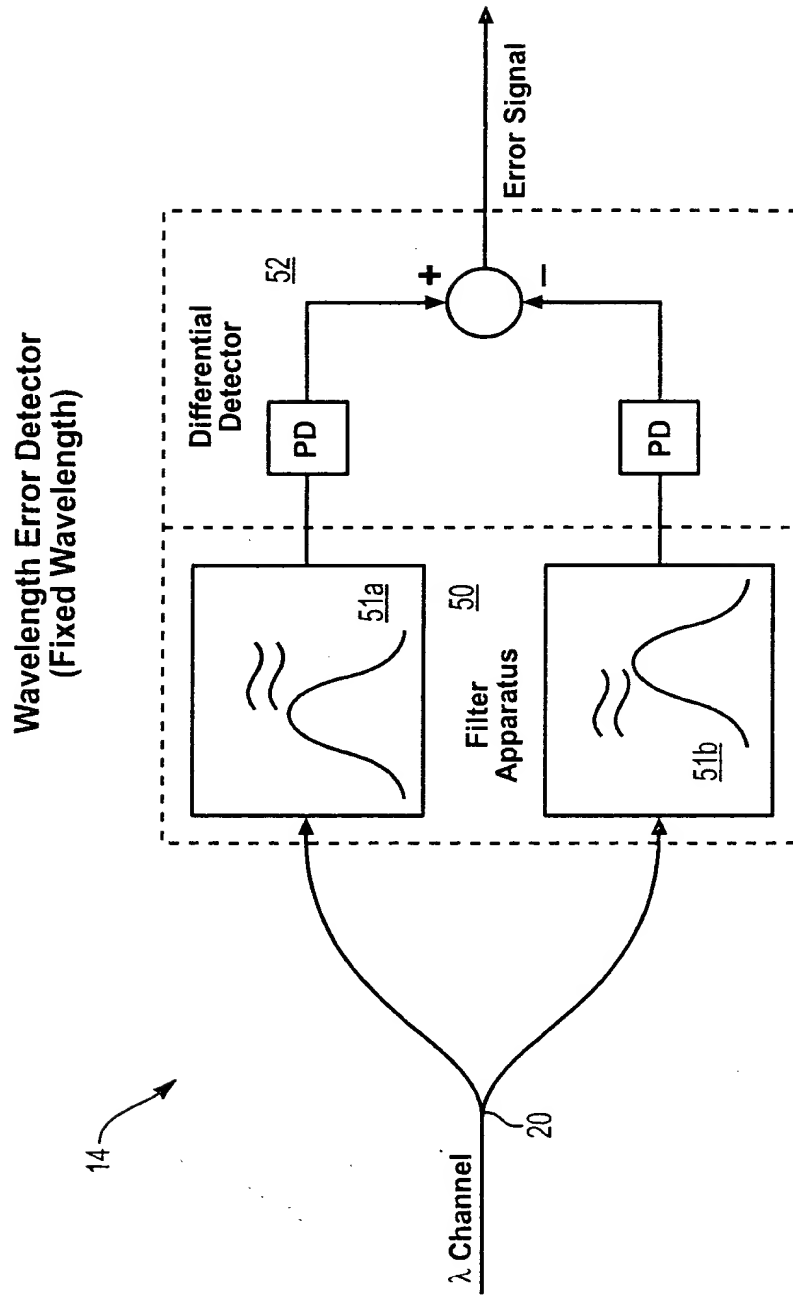


FIG. 8

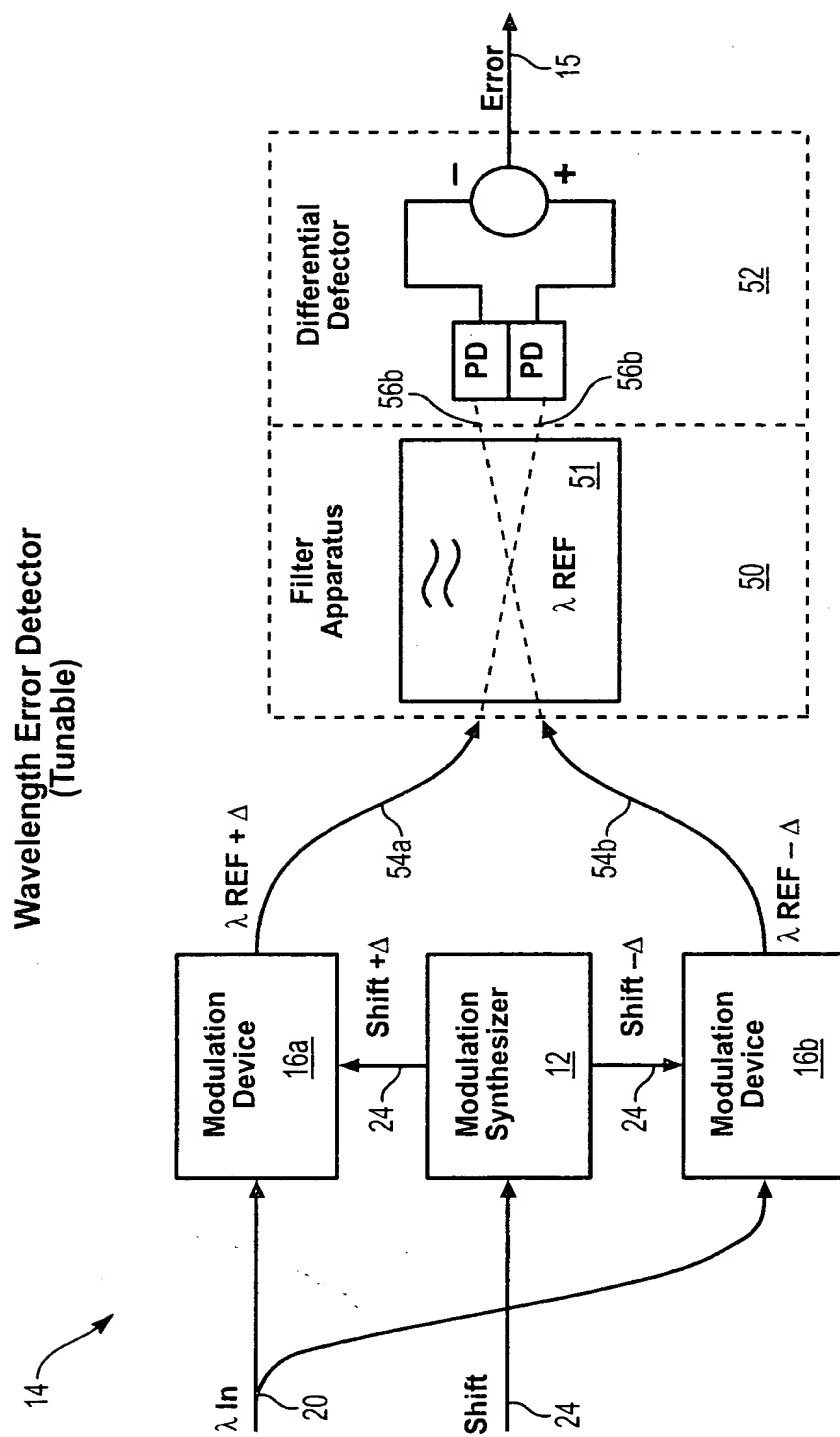


FIG. 9

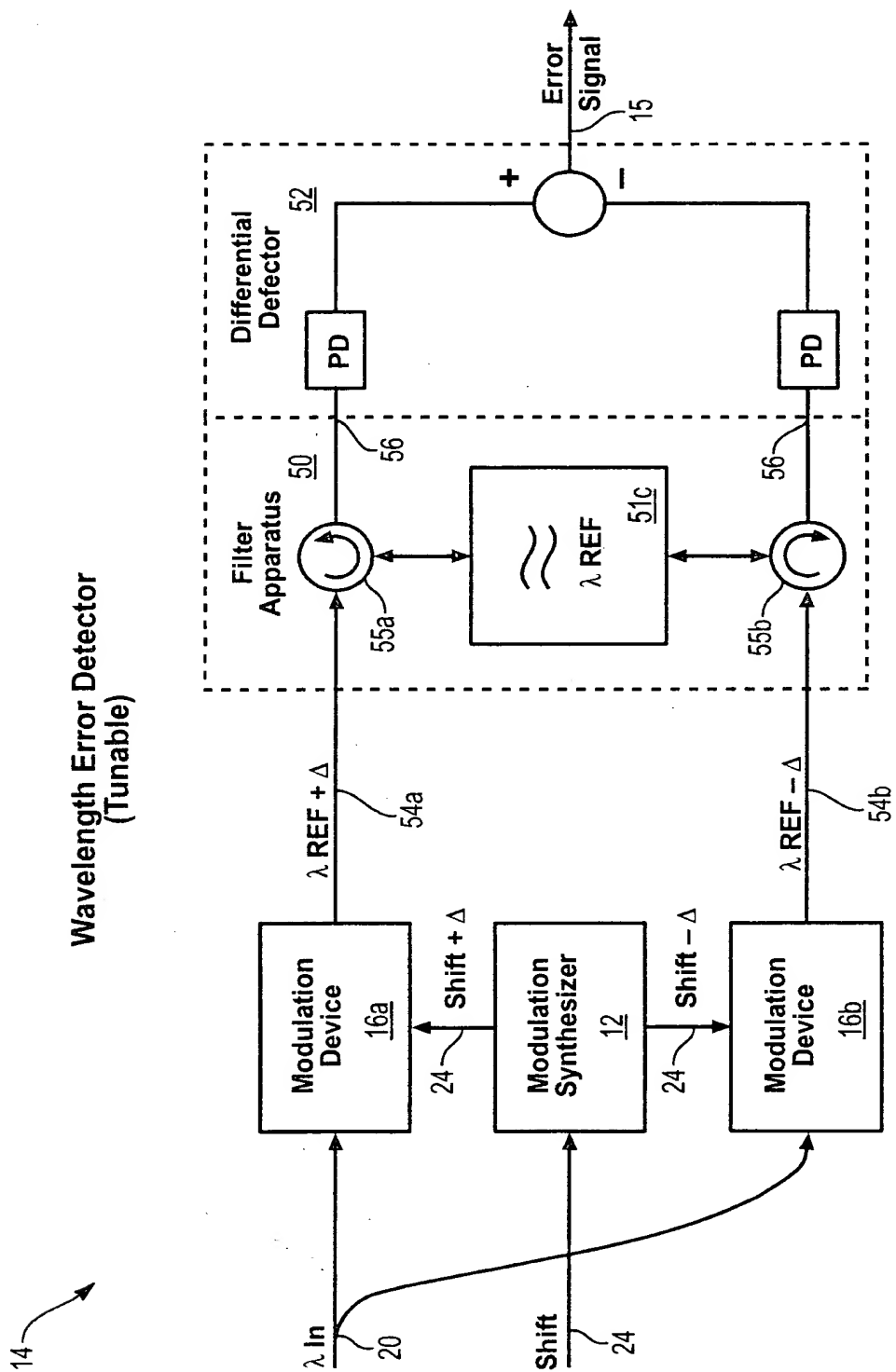


FIG. 10

Channel Allocation Mechanism

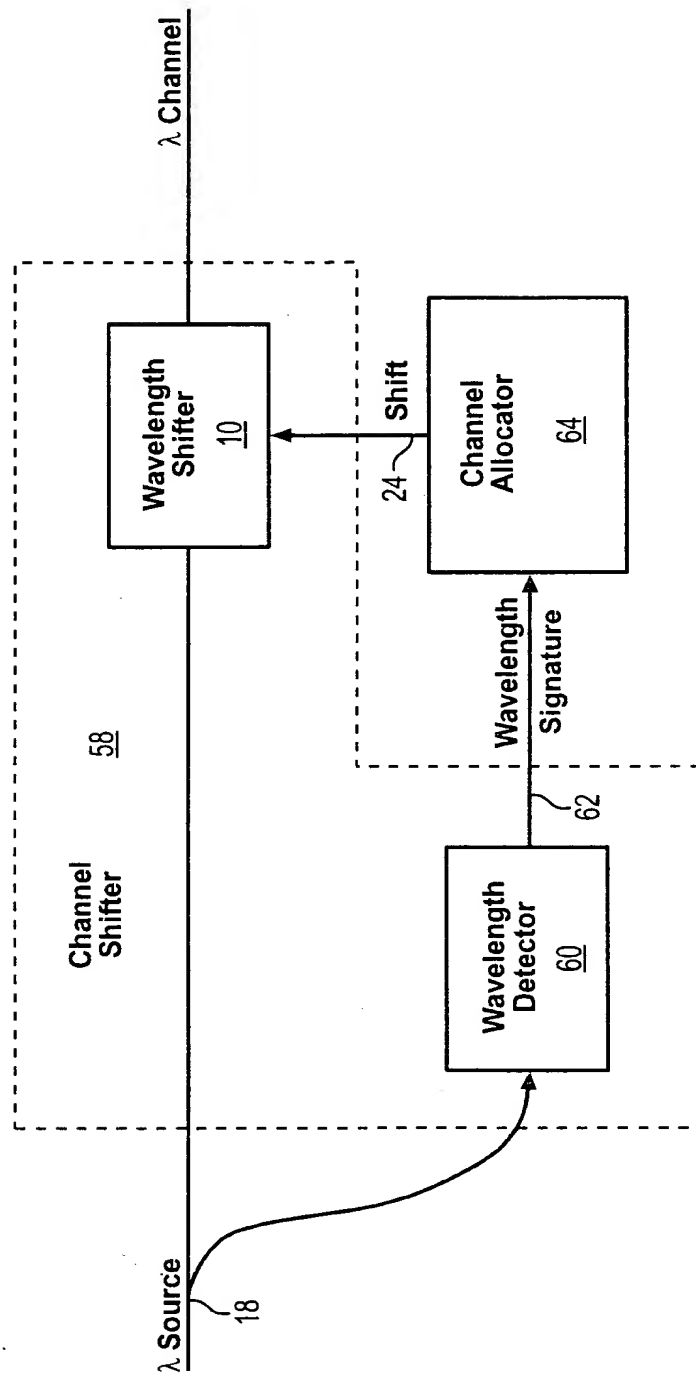


FIG. 11

70 → Tunable Wavelength Stabilized Transmitter

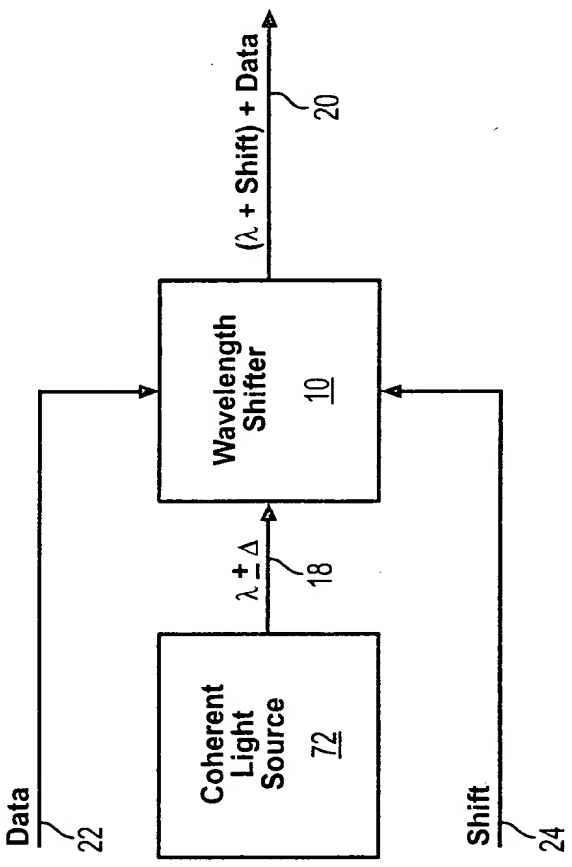


FIG. 12

FIG. 13 is a block diagram of a Recursive Wavelength Shifter. The diagram shows an input signal λ In (18) entering an Amplifier (82). The output of the Amplifier (82) is fed into a Loop Filter (84). The output of the Loop Filter (84) is fed into a Wavelength Shifter (10). The output of the Wavelength Shifter (10) is fed back into the input of the Amplifier (82). The output of the Wavelength Shifter (10) is also fed into an Output Filter (78). The output of the Output Filter (78) is labeled λ Out (87). A Shift input (24) is also shown, which is fed into the Wavelength Shifter (10). A graph (80) is shown to the right of the diagram, illustrating the output spectrum.

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Recursive Wavelength Shifter

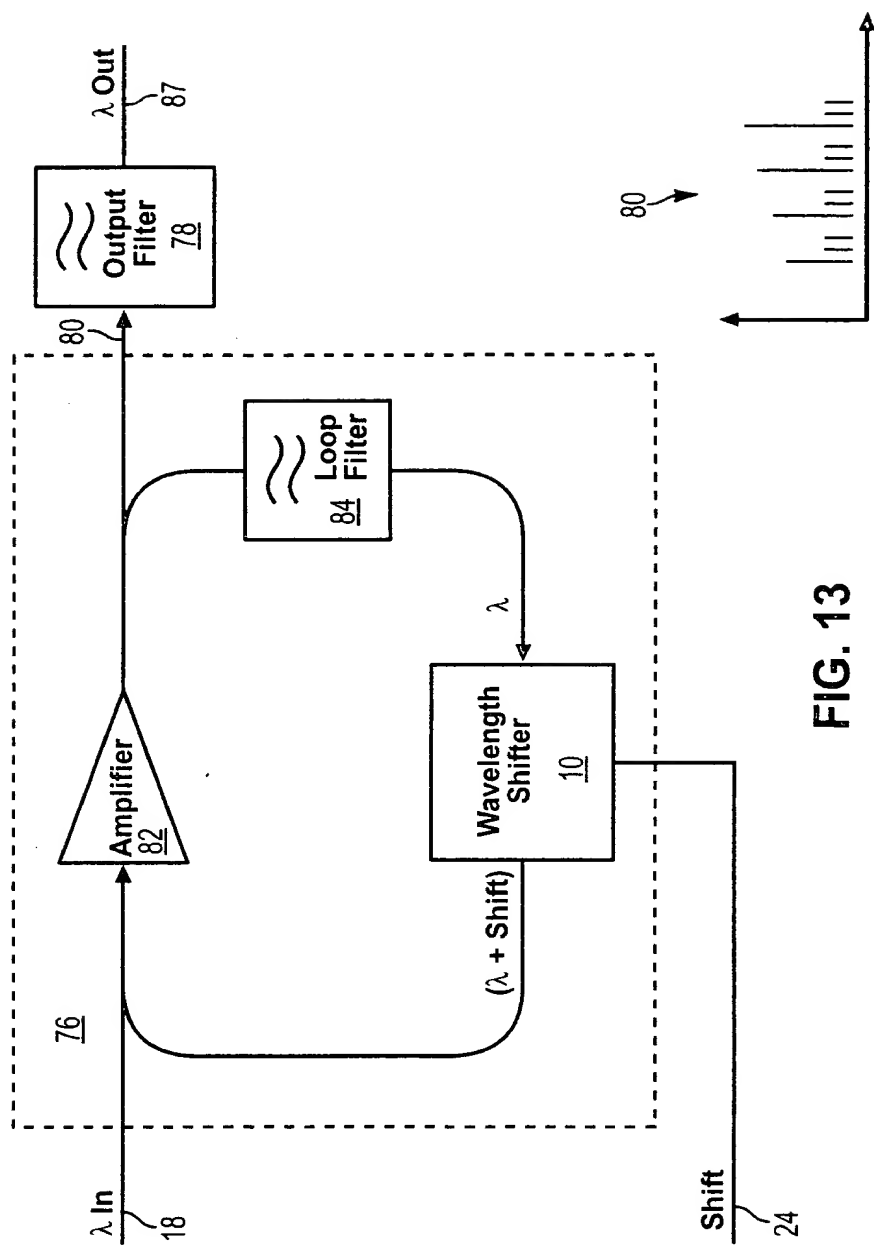


FIG. 13

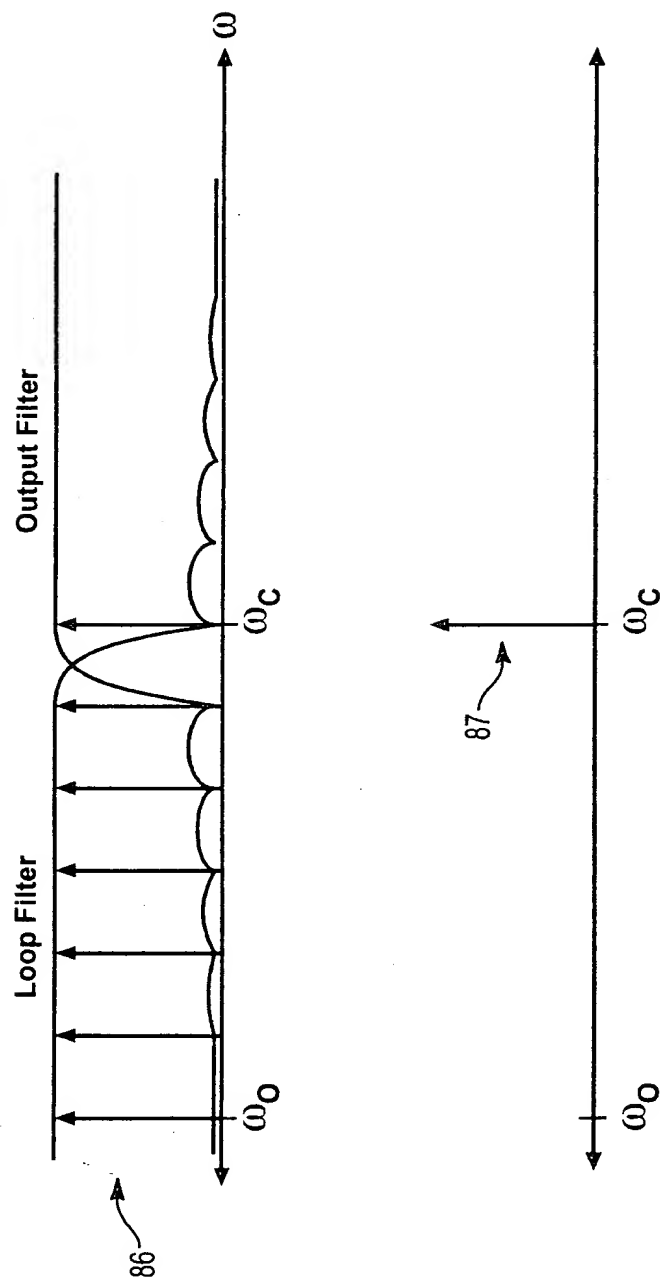


FIG. 14